Claims

1. A method of identifying a polypeptide, said method comprising:
(a) adhering a complex biological sample from a first type of individual to a support to create an array;
(b) adhering a complex biological sample from a second type of individual to a support to create an array;
(c) exposing a peptide-nucleic acid coupled library at least one time to an array formed by step (a) to create a first product; and
(d) exposing said first product at least one time to an array formed by step (b) to create a second product.

2. The method of claim 1, further comprising the steps of:
(e) exposing a peptide-nucleic acid coupled library at least one time to an array formed by step (b) to create a third product; and
(f) exposing said third product at least one time to an array formed by step (a) to create a fourth product.

3. The method of claim 2, further comprising the step of:
(g) comparing said second product and said fourth product.

4. The method of claim 2, further comprising the steps of:
(g) combining said second and fourth products to produce a pooled product; and
(h) amplifying said pooled product.

5. The method of claim 4, further comprising the steps of:

(i) adhering a portion of said amplified pooled product to a support to provide an array; and

(j) exposing a complex biological sample from said first or second type of individual at least one time to an array formed by step (i) to provide a fifth product.

6. The method of claim 5, further comprising the step of:

(k) exposing a complex biological sample from said first or second type of individual at least one time to an array formed by step (i) to provide a sixth product, wherein said complex biological sample is from a type of individual which is different from that used in step (j).

7. The method of claim 6, further comprising the step of:

(l) comparing said fifth product and said sixth product.

8. The method of claim 1, wherein said complex biological sample is from a tissue.

9. The method of claim 8, wherein said tissue is selected from the group consisting of epithelial, connective, muscle, and nerve.

10. The method of claim 1, wherein said complex biological sample is from a body fluid.

11. The method of claim 10, wherein said body fluid is selected from the group consisting of cerebrospinal fluid, blood, saliva, mucous, tears,

pancreatic juice, seminal fluid, sweat, milk, bile, plasma, serum, lymph, urine, pleural effusions, bronchial lavage, ascities, and synovial fluid.

12. The method of claim 11, wherein said body fluid is cerebrospinal fluid.

13. The method of claim 1, wherein said complex biological sample is from an organ type.

14. The method of claim 13, wherein said organ type is selected from the group consisting of skin, bone, cartilage, tendon, ligament, skeletal muscle, smooth muscle, heart, blood, blood vessel, brain, spinal cord, peripheral nerve, nose, trachea, lung, mouth, esophagus, stomach, intestine, kidney, uterus, ureters, urethra, bladder, hypothalamus, pituitary, thyroid, pancreas, adrenal gland, ovary, oviduct, vagina, mammary gland, testicle, seminal vesicle, penis, lymph, lymph node, lymph vessel, white blood cell, T-cell and B-cell.

15. The method of claim 1, wherein said complex biological sample is from a cultured cell type.

16. The method of claim 15, wherein said cell type is derived from epithelial, connective, muscle or nervous tissue.

17. The method of claim 1, wherein one of the complex biological samples is from a diseased individual and the other complex biological sample is from a non-diseased individual.

18. The method of claim 1, wherein one of the complex biological samples is from a medicated individual and the other complex biological sample is from a non-medicated individual.

19. The method of claim 1, wherein said library is a phage display library.

20. The method of claim 19, wherein said library is an antibody library.

21. The method of claim 19, wherein said library is a recombinant display library.

22. The method of claim 19, wherein said library is a synthetic peptide library.

23. The method of claim 1, wherein said first product comprises material that bound to the array during the exposing step (c) and was subsequently released.

24. The method of claim 1, wherein said second product comprises material that did not bind to the array during the exposing step (d).

25. The method of claim 2, wherein said third product comprises material that bound to the array during the exposing step (e) and was subsequently released.

26. The method of claim 2, wherein said fourth product comprises material that did not bind to the array during the exposing step (f).

27. The method of claim 1, further comprising treating the complex biological sample of step (a) or step (b) prior to said adhering.

28. The method of claim 27, wherein said treating comprises denaturing.

29. The method of claim 1, wherein the support of step (a) or step (b) is a solid support.

30. The method of claim 1, wherein both the support of step (a) and the support of step (b) are solid supports.

31. The method of claim 1, wherein the array of step (a) or step (b) is created by crosslinking said support to said complex biological sample.

32. The method of claim 1, wherein both the array of step (a) and the array of step (b) are created by crosslinking said support to said complex biological sample.

33. The method of claim 5, wherein said fifth product comprises material that bound to the array during the exposing step (j) and was subsequently released.

34. The method of claim 6, wherein said sixth product comprises material

that bound to the array during the exposing step (k) and was subsequently released.

35. The method of claim 1, further comprising the step of amplifying said second product.

36. The method of claim 2, further comprising the step of amplifying said fourth product.

37. The method of claim 1, further comprising analyzing said second product via mass spectrometry.

38. The method of claim 2, further comprising analyzing said fourth product via mass spectrometry.

39. The method of claim 5, further comprising analyzing said fifth product via mass spectrometry.

40. The method of claim 6, further comprising analyzing said sixth product via mass spectrometry.

41. The method of claim 7, wherein said fifth and sixth products are compared using mass spectrometry.

42. The method of claim 1, wherein said library is exposed to the array formed by step (a) more than one time to create said first product.

43. The method of claim 1, wherein said first product is exposed to the array formed by step (b) more than one time to create said second product.

44. The method of claim 2, wherein said library is exposed to the array formed by step (b) more than one time to create said third product.

45. The method of claim 2, wherein said third product is exposed to the array formed by step (a) more than one time to create said fourth product.

46. The method of claim 5, wherein the complex biological sample of step (j) is exposed to the array formed by step (i) more than one time to create said fifth product.

47. The method of claim 6, wherein the complex biological sample of step (k) is exposed to the array formed by step (i) more than one time to create said sixth product.

48. The method of claim 2, wherein the array of step (c) and step (f) are the same array.

49. The method of claim 2, wherein the array of step (c) and step (f) are separate arrays.

50. The method of claim 2, wherein the array of step (d) and step (e) are the same array.

51. The method of claim 2, wherein the array of step (d) and step (e) are separate arrays.

52. The method of claim 6, wherein the array of step (j) and step (k) are the same array.

53. The method of claim 6, wherein the array of step (j) and step (k) are different arrays.